

DOCKET NO. 158 - An application of Springwich Cellular Limited Partnership for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a cellular telecommunications tower and associated equipment for a proposed site located approximately 0.3 miles west of Hoskins Road, near the intersection of Andrews Road, Bloomfield, Connecticut.

: Connecticut  
: Siting  
: Council  
: May 6, 1993

#### Findings of Fact

1. Springwich Cellular Limited Partnership (Springwich) in accordance with provisions of sections 16-50g through 16-50z of the Connecticut General Statutes (CGS) applied to the Connecticut Siting Council (Council) on November 20, 1992, for a Certificate of Environmental Compatibility and Public Need (Certificate) for the construction, operation, and maintenance of a telecommunications facility in the Town of Bloomfield, Connecticut, to expand and improve cellular service in Hartford County within the Hartford New England County Metropolitan Area (NECMA). (Springwich 1, p. 1)
2. Public notice of the application, as required by CGS section 16-501(b), was published in the Hartford Courant on November 13 and 14, 1992. (Springwich 1, Section 1, pp. 5-6)
3. Pursuant to CGS section 16-50m, the Council, after giving due notice thereof, held a public hearing on the application on January 27, 1993, beginning at 3:00 P.M., and reconvening at 7:00 P.M., in the auditorium of the Bloomfield Junior High School, 330 Park Avenue, Bloomfield, Connecticut. (Hearing Notice, p. 1)
4. The Council and its staff made an inspection of the proposed tower site on January 27, 1993. During the field inspection, Springwich flew balloons at the tower site to simulate the height of the proposed tower at 180 feet. (Hearing Notice, p. 3)
5. On December 21, 1984, the Southern New England Telephone Company (SNET) received an operating license (Radio Station Authorization) from the Federal Communications Commission (FCC) to construct and operate the Hartford NECMA cellular radio telecommunications sites within

which the Town of Bloomfield is located. This license was subsequently transferred to Springwiche. (Springwiche 1, Section VI, p. 28)

6. The FCC has determined that there is a general public need for cellular service. Applicants for cellular licenses are not required to demonstrate a general public need for cellular service to state regulators. (Springwiche 1, p. 3; Springwiche 1, Section III, p. 3)
7. The FCC has preempted state regulation of cellular telephone service in the areas of technical standards, market structure, and state certification prior to federal filing. (Springwiche 1, Section III, p. 4)
8. Cellular service consists of low power transmitter/receiver stations known as cell sites. Cell sites cover a geographic area typically two to ten miles in diameter, called a cell. The cellular service system design allows for the configuration of cell sites so that the same frequencies can be used at the same time in different cells (frequency reuse) and to provide uninterrupted service throughout a service area (hand-off). (Springwiche 1, pp. 2-3; Springwiche 1, Section II, pp. 2-3)
9. The FCC designates certain frequencies for wireline and non-wireline carrier use. In this state, Springwiche, the wireline carrier, and the non-wireline carrier have each been allocated 25 MHz of frequency spectrum, which provides 416 two-way radio channels for each carrier. (Springwiche 1, Section III, p. 3)

#### Need

10. On June 23, 1992, Springwiche submitted a Notice of Exempt Modification to the Council for the use of an existing 140-foot guyed tower owned by the Connecticut Light and Power Company (CL&P) on Hoskins Road in Bloomfield, Connecticut, to provide partial cellular coverage to portions of the Towns of Bloomfield and Simsbury. (Springwiche 1, p. 1)
11. On July 15, 1992, the Council approved the exempt modification of the CL&P tower which included construction of an equipment building and improvements to the access road. Springwiche subsequently installed cellular antennas at the 50-foot level of this tower, providing partial coverage until it could submit an application to the Council for replacing the existing tower with a taller one. (Springwiche 1, p. 1)
12. Coverage from the existing antennas at the 50-foot level of the CL&P tower does not presently overlap with

coverage from Springwich's adjacent cell sites in Hartford, Enfield, South Windsor, or Canton. (Tr., p. 19; Springwich 3, Q. 10; Springwich 2, Q. 2)

13. Many roads in the Towns of Granby, Bloomfield, Windsor Locks, and Simsbury have poor cellular telephone coverage, including areas surrounding Bradley International Airport. The proposed facility would link together existing Springwich coverage from sites in Hartford, Canton, Enfield, and South Windsor. New and improved coverage would be provided to Routes 10, 20, 187, 189, 202, and 315 in the Towns of Bloomfield, Simsbury, Windsor, Granby, and East Granby, and at Bradley International Airport in Windsor Locks. (Springwich 1, pp. 4-5; Springwich 1, Section VI, p. 10; Springwich 2, Q. 2)
14. The proposed Bloomfield facility would also serve to partially deload the existing Hartford, Canton, Enfield, and South Windsor cell sites which experience call blockage during peak calling periods. (Springwich 1, Section VI, p. 1; Springwich 1, Section VI, p. 10; Tr., p. 16)

#### Existing Tower and Antennas

15. The existing 140-foot tower, built in 1956, is owned by CL&P and contains eight dishes and six whip antennas used by CL&P. The Simsbury Police Department has one antenna on this tower, and Springwich has five antennas at the 50-foot level. (Springwich 1, Section IV, p. 3; Springwich 3, Q. 10; Springwich 4, letter of 7-22-91)
16. The existing CL&P tower is not tall enough or strong enough to support the additional weight and wind loading of a cellular antenna configuration while providing sufficient space to separate transmit and receive antennas. In addition, this tower could not be strengthened enough to support the five cellular whip antennas at higher levels. (Springwich 3, Q. 10, Q. 12; Springwich 1, Section IV, pp. 6-7)

#### Proposed Tower and Antennas

17. Springwich would construct a 180-foot self-supporting lattice tower approximately 20 feet from the existing 140-foot CL&P tower, which would be removed once all its antennas had been transferred to the new tower. (Springwich 1, Section VI, p. 3)
18. The proposed tower and its foundation would be designed to Electronic Industries Association (EIA)-RS-222E specifications regarding structural standards for steel antenna towers and antenna supporting structures, including withstanding 100 mph winds while covered with

- one half inch of radial ice. (Springwich 1, Section V, p. 3)
19. The total height of the proposed tower, including antennas, would be 183 feet. A fence would surround the proposed tower. (Springwich 1, Section VI, pp, 24, 33-34)
  20. The proposed Springwich antennas would include 12 flat rectangular directional panel antennas one foot by four feet in size and two paging antennas all placed between the 140-foot and 160-foot levels of the proposed tower. (Springwich 1, Section V, p. 5; Springwich 2, Q. 9; Springwich 3, Q. 10)
  21. The proposed tower would be owned by CL&P and jointly used by Springwich, CL&P, the Simsbury Police Department, and the Town of Bloomfield Committee on Emergency Medical Services for its Civil Defense requirements. The Town of Simsbury Police Department antenna and CL&P's Radio Controlled Load Management (RCLM) antenna are at the top of the existing CL&P tower. To maintain the existing coverage for the Simsbury Police Department and CL&P RCLM system, these antennas need to be mounted above the space on the proposed tower reserved for the Springwich antennas. CL&P would also attach two point-to-point communications dishes near the 180-foot level of the proposed tower. (Springwich 1, Section IV, p. 7; Springwich 3, Q. 9, Q. 11)
  22. Springwich agreed to fund the proposed tower as a replacement for the existing tower. The proposed tower would be tall enough and of sufficient strength to allow the addition of the Springwich and three other users antennas. (Springwich 1, Section IV, p. 7)

#### Alternative Tower

23. As an alternative to building the proposed 180-foot lattice tower to be shared by Springwich, CL&P, the Town of Bloomfield, and the Town of Simsbury Police Department, Springwich would construct a 160-foot monopole for its own use only at the proposed site, while leaving the existing 140-foot CL&P tower as it is. The Springwich antennas would be mounted at the 160-foot level as on the proposed tower. (Springwich 1, Section VII, p. 1; Springwich 1, p. 1)
24. The 160-foot alternative monopole would be designed to EIA-RS-222E specifications to withstand 100 mph winds while covered with one half inch of radial ice. (Springwich 1, Section V, p. 4)

#### Tower Marking and Lighting

25. Springwich requested Federal Aviation Administration (FAA) approval for the proposed tower on November 28,

1989. The FAA determined the proposed tower would not be an obstruction to air navigation, but would require marking or lighting due to the proposed site's proximity to Bradley International Airport. The existing tower is presently lighted at night with a flashing red light. (Springwich 1, p. 5; Springwich 2, Q. 8)

26. The FAA Determination of No Hazard to Air Navigation for construction of the proposed tower expires on July 31, 1993. (Springwich 1, Section VI, p. 30; Springwich 2, Q. 8)
27. The proposed 180-foot tower would be marked with a white strobe light during the day and a flashing red light at night. The tower would not be marked by painting. The alternate 160-foot monopole would also require lighting. (Springwich 1, Section V, p. 5; Springwich 2, Q. 8; Tr., p. 13)

#### Proposed Site

28. The proposed site is owned by CL&P and is located 1600 feet from Hoskins Road in Bloomfield. The proposed site is zoned R-80 Residential and has an elevation of 409 feet above mean sea level (AMSL). (Springwich 1, Section VI, pp. 1, 4, 16)
29. The proposed site contains an electric transmission line, support structures for the transmission line, an existing 140-foot CL&P tower, two equipment buildings for CL&P's communications system, one equipment building for the Simsbury Police Department, and a new Springwich equipment building. The only buildings within the fall zone of the proposed tower would be the existing telecommunications equipment buildings. (Springwich 1, Section II, p. 1; Springwich 1, Section VI, p. 34)
30. An existing gravel access road, maintained by CL&P, leads to the proposed site. This access road was constructed during the 1950s, and upgraded in 1992. No additional clearing or widening of this road would be required for the construction of the proposed tower. (Springwich 1, Section VI, p. 2; Springwich 3, Q. 13; Tr., pp. 37-38)
31. The proposed site has existing overhead utility service from Hoskins Road. (Springwich 1, Section VI, p. 15)
32. To construct the proposed tower, the clearing of approximately four trees would be required. No blasting would be required. The fall zone of the proposed tower would be entirely on CL&P-owned property. (Tr., pp. 14-15)
33. There are no inland wetlands in the immediate vicinity of the proposed tower construction site, which would be

approximately five feet outside of the Town of Bloomfield's 100-foot regulated inland wetland area. (Springwich 2, Q. 4; Town of Bloomfield Inland Wetlands and Watercourses Regulations and Inland Wetlands Map)

34. The existing access road crosses inland wetlands in four locations. Springwich received approval from the Bloomfield Inland Wetlands and Watercourses Commission on March 16, 1992, to widen the access road approved by the Council on July 15, 1992, as an exempt modification of an existing tower site, for the delivery of the Springwich equipment building. (Springwich 2, Q. 4)
35. On April 16, 1992, Springwich received approval from the Bloomfield Planning and Zoning Commission for the construction of a modular one story radio equipment building. This equipment building has been installed and has exterior dimensions of 12 feet by 26 feet. Security and fire alarms have been installed inside this building, which was approved by the Council on July 15, 1992, as an exempt modification to an existing tower site. (Springwich 1, Section IV, pp. 1-2)
36. The nearest residence to the proposed tower would be approximately 1700 feet away. (Springwich 2, Q. 5)
37. Visual effects would be limited to near and intermediate range views of the proposed tower from the east side of Talcott Mountain and from intermittent points east of Hoskins Road. Along Hoskins Road, the tower would be visible from points near the CL&P transmission line right-of-way. (DEP Comments, 12/31/92, p. 2)
38. There are no known existing populations of federally Endangered and Threatened Species or State Endangered, Threatened or Special Concern species that occur within the boundaries of the proposed site. (Springwich 2, Q. 6)
39. Construction of the proposed tower would have no effect on any sites having historical significance in the area. (Springwich 2, Q. 7)

#### Power Densities

40. The Connecticut power density standard for the frequencies used by cellular antennas is  $2.933 \text{ mW/cm}^2$ . With the Springwich antennas attached at the 160-foot level of the proposed tower, the maximum power density 100 feet from the base of the proposed tower would be  $0.089998 \text{ mW/cm}^2$ , which is 3.07 percent of the Connecticut standard, and 15.4 percent of the proposed 1991 American National Standards Institute standard, which is 20 percent of the current Connecticut standard. The power density would be less than the existing antenna configuration now located fifty feet above ground level. (Springwich 1, Section VI, p. 24)

41. The calculated maximum power densities at the base of the proposed tower for the other antennas to be attached to the proposed tower would be as follows: paging antennas, 0.017777 mW/cm<sup>2</sup>, which is 0.57 percent of the Connecticut standard; CL&P, Simsbury Police Department, and Bloomfield civil defense, transmitting at the 30 to 300 MHz frequencies, 0.007609 mW/cm<sup>2</sup>, which is 0.76 percent of the Connecticut standard; CL&P antennas transmitting between 300 and 1500 MHz, 0.002669 mW/cm<sup>2</sup>, which is 0.18 percent of the Connecticut standard; and CL&P antennas transmitting above 1500 MHz, 0.034504 mW/cm<sup>2</sup>, which is 0.69 percent of the Connecticut standard. Except for the power density level from the paging antenna, these power densities would be unchanged from those found on the existing tower. The calculations are based on conservative assumptions and represent levels much higher than actual levels. (Springwich 1, Section VI, p. 24; Tr., pp. 18, 26, 50)

#### Tower Sharing

42. CL&P owns a 100-foot passive repeater tower on a ridge approximately 1000 feet west of the existing 140-foot tower. The repeater tower site has no power or telephone utilities and no access road. To provide the proposed coverage to Bradley International Airport, this tower would have to be raised by an additional 80 feet to allow the cellular signals to clear the ridge line to the east and north. (Springwich 1, Section VI, p. 3; Springwich 3, Q. 14)
43. To place equipment from the existing repeater tower on the proposed tower to cause a net reduction of tower structures could require the proposed tower to be higher, but the height required is unknown at this time. (Tr., pp. 68-69, pp. 71-72)
44. CL&P has experienced telecommunications problems at its Hopmeadow service center in Simsbury. After establishing a microwave path between Bristol and Bloomfield from the proposed tower, CL&P would establish analog communications to its Simsbury service center via its repeater tower. However, CL&P has not determined the necessary height of the existing repeater tower to establish this link with the Simsbury service center. (Tr., pp. 66-68)
45. CL&P would require a minimum height of 175 feet on the proposed tower to expand its communications network between Bloomfield, Bristol, Berlin, Connecticut Yankee nuclear facility in Haddam, and the Millstone nuclear facility in Waterford. (Springwich 3, Q. 9; Tr., pp. 62-65)

Costs

46. The access road improvements, building, power supply, and radio equipment have already been paid for at the proposed site. The estimated remaining costs to construct the proposed tower would be as follows:

Antenna equipment and tower	\$300,000.00
Miscellaneous	<u>30,000.00</u>
Total	\$330,000.00

(Springwich 1, Section VI, p. 25)

47. To construct the alternative 160-foot monopole, the proposed costs would be as follows:

Antenna equipment and tower	\$90,000.00
Contingency costs	<u>40,000.00</u>
Total	\$130,000.00

(Springwich 1, Section VII, p. 2)

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